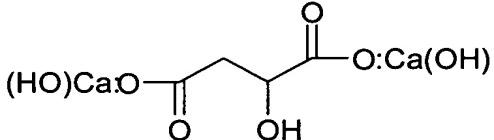


CLAIMS

What Is Claimed Is:

1. A mineral fortified food matrix, comprising:
a dimetalhydroxy malate composition; and
5 a food matrix fortified with the dimetalhydroxy malate composition.
2. A mineral fortified food matrix as in claim 1, wherein the dimetalhydroxy malate composition is a dicalciumhydroxy malate having the structure:


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3. A mineral fortified food matrix as in claim 2, wherein the food matrix is further fortified by a second nutritionally relevant metal source.
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4. A mineral fortified food matrix as in claim 3, wherein the second nutritionally relevant metal source is an iron source.
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5. A mineral fortified food matrix as in claim 4, wherein the iron source is an iron amino acid chelate.
6. A mineral fortified food matrix as in claim 1, wherein the food matrix is a natural cereal grain.
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7. A mineral fortified food matrix as in claim 1, wherein the food matrix is a processed cereal grain.
8. A mineral fortified food matrix as in claim 1, wherein the food matrix is a beverage.

9. A mineral fortified food matrix as in claim 1, wherein the food matrix is a dry beverage mix.

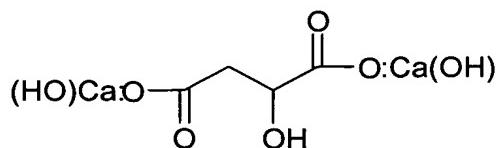
10. A mineral fortified food matrix as in claim 1, wherein the food matrix is
5 an oleaginous or dairy product.

11. A mineral fortified food matrix as in claim 1, wherein each metal of the
dimetalhydroxy malate is independently a nutritionally relevant metal selected
from the group consisting of copper, zinc, manganese, iron, magnesium, calcium,
10 and combinations thereof.

12. A method of administering a mineral in a bioavailable form to a warm-blooded animal, comprising:

fortifying a food matrix with a dimetalhydroxy malate composition; and
15 orally administering the food matrix fortified with the dimetalhydroxy malate
composition to a warm-blooded animal.

13. A method as in claim 12, wherein the dimetalhydroxy malate
composition is a dicalciumhydroxy malate composition having the structure:
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14. A method as in claim 12, further comprising the step of fortifying the
food matrix with a second nutritionally relevant metal source prior to
25 administering.

15. A method as in claim 14, wherein the second nutritionally relevant
metal source is an iron source.

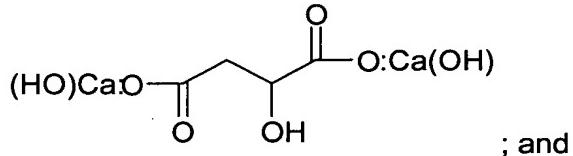
16. A method as in claim 15, wherein the iron source is an iron amino acid chelate.

17. A method as in claim 12, wherein the food matrix is selected from the
5 group consisting of natural cereal grains, processed cereal grains, energy bars,
beverages, dry beverage mixes, oleaginous foods, and dairy products.

18. A method as in claim 12, wherein each metal of the dimetalhydroxy malate is independently a nutritionally relevant metal selected from the group
10 consisting of copper, zinc, manganese, iron, magnesium, calcium, and combinations thereof.

19. A calcium fortified food matrix, comprising:
a dicalciumhydroxy malate composition having the structure:

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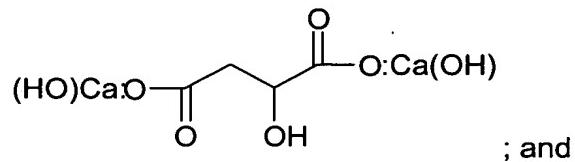


a food matrix fortified with the dicalciumhydroxy malate composition.

20 20. A calcium fortified food matrix as in claim 19, wherein the food matrix is further fortified with an iron amino acid chelate.

21. A method of administering calcium in a bioavailable form to a warm-blooded animal, comprising:

25 fortifying a food matrix with a dicalciumhydroxy malate composition having the structure:



; and

orally administering the food matrix fortified with the dicalciumhydroxymalate composition to a warm-blooded animal.

- 5 22. A method as in claim 21, further comprising the step of fortifying the food matrix with an iron amino acid chelate prior to administering.

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